

WHAT IS CLAIMED IS:

1. A treatment for waste pickling solutions containing iron and method of ferric oxide formation, consisting of spent acid with iron content, the addition therein of sodium hydroxide to adjust the pH value, the execution of a chemical
5 reaction in another tank into which sodium hydroxide and air are added while the admixture is exposed to an ultraviolet beam circuit in a photo-oxidation process, and finally magnetic culling to separate ferric oxide in the said solution.
2. A treatment for waste pickling solutions containing iron and method of ferric oxide formation as claimed in Claim 1, in which the said acid is purged with
10 industrial-use water.
3. A treatment for waste pickling solutions containing iron and method of ferric oxide formation as claimed in Claim 1, in which after the pH value of the acid solution is adjusted, it is filtered and then subjected to the said photo-oxidation process.
- 15 4. A treatment for waste pickling solutions containing iron and method of ferric oxide formation as claimed in Claim 1, in which the said pH value adjustment and photo-oxidation procedures involve stirring and the admission of air to achieve an even reaction.
- 20 5. A treatment for waste pickling solutions containing iron and method of ferric oxide formation as claimed in Claim 1, in which following the said magnetic culling, effluent is subjected to a desalting process to achieve compliance with water discharge standards.
- 25 6. A treatment for waste pickling solutions containing iron and method of ferric oxide formation as claimed in Claim 1, in which the said ferric oxide is dehydrated after the said magnetic culling.
7. A treatment for waste pickling solutions containing iron and system of ferric oxide formation comprised of:

a spent acid tank for storing industrial cleaning and processing solutions containing iron;

a pH value adjustment device that is connected to spent acid recovery equipment and, furthermore, connected to a pipeline which provides for the adding
5 of sodium hydroxide;

a photo-oxidation reaction device that is connected to the pH value adjustment tank and which has an ultraviolet beam circuit which enables the execution of a photo-oxidation process; and

a magnetic culling device that separates ferric oxide in the said solution.

10 8. A treatment for waste pickling solutions containing iron and system of ferric oxide formation as claimed in Claim 7, in which the said pH value adjustment device is equipped with a stirring device.

9. A treatment for waste pickling solutions containing iron and system of ferric oxide formation as claimed in Claim 7, in which the said photo-oxidation
15 reaction device is equipped with a stirring device.

10. A treatment for waste pickling solutions containing iron and system of ferric oxide formation as claimed in Claim 7, in which the said spent acid tank is capable of operation at production lines.